

Patent Claims

1. A method for improving a load distribution in a signaling network having a plurality of message transfer parts (MTP) and associated signaling line groups (LSx), composed of steps:
- 5 a) desired destination addresses (DPC) are defined;
- b) n signaling line groups (LSx) which are to be used in m actual routes (CRy) to the destination addresses (DPC) are defined, and n x m associated route meters (C(LSx,y)) are initialized;
- 10 c) n setpoint meter readings (Csetp(LSx)) are calculated for each of the n signaling line groups (LSx);
- 15 d) n x m relative deviations (Delta Crel (LSx,y)) from the respective n setpoint meter readings (Csetp(LSx)) are calculated for each of the n x m route meters (C(LSx,y));
- e) m route meters (C(LSx,y)) with the greatest relative deviations (Delta Crel (LSx,y)) are determined for different signaling line groups (LSx); and
- 20 f) m signaling line groups (LSx) are assigned to the m actual routes (CRy) in accordance with the determined m route meters (C(LSx,y)), and affected route meters (C(LSx,y)) are adapted.
- 25 2. The method as claimed in patent claim 1, characterized in that the step c) comprises the steps:
- c1) n sums are calculated by adding the values of the m route meters (C(LSx,y)) for each signaling line group (LSx); and
- 30 c2) the n sums are divided by the number m of actual routes (CRy).
3. The method as claimed in patent claim 1 or 2, characterized in that the step d) comprises the steps:

d1) the $n \times m$ absolute deviations ($\Delta C(LSx, y)$) are calculated by subtracting the values of the $n \times m$ route meters ($C(LSx, y)$) from the values of the associated n setpoint meter readings ($Csetp(LSx)$); and

- 5 d2) the $n \times m$ relative deviations ($\Delta Crel(LSx, y)$) are calculated by dividing the calculated absolute deviations ($\Delta C(LSx, y)$) by the values of the associated n setpoint meter readings ($Csetp(LSx)$).

4. The method for improving a load distribution as
10 claimed in one of patent claims 1 to 3, characterized in that the step f) the adaptation of the affected route meters ($C(LSx, y)$) comprises the steps:

f1) the value of the determined route meter ($C(LSx, y)$) is incremented when the signaling line groups (LSx) are
15 defined for the first time, and

f2) the value of the route meter associated with the determined route meter ($C(LSx, y)$) is additionally decremented when the signaling line groups (LSx) are defined again.

20 5. The method for improving a load distribution in a signaling network having a plurality of message transfer parts (MTP) and associated signaling line groups (LSx) comprising the steps:

- a) desired destination addresses (DPC) are defined;
25 b) signaling line groups (LSz) which can be used in possible routes (PRz) to the destination addresses (DPC) instead of a failed or a newly available signaling line group are defined, and associated summation meters ($C_Sum(LSx)$) which represent a number
30 of signaling line groups in actual routes ($CRxy$) to all the defined destination addresses (DPC) are defined;
c) each of the defined signaling line groups (LSx) is checked to determine whether it is available and/or permitted as an actual route (CRy) to the defined
35 destination addresses;

d) the summation meters (C_Sum(LSx)) are read out for all the defined signaling line groups if the result in step c) is positive;

5 e) the signaling line groups (LSx) for the respective destination addresses whose associated summation meters (C_Sum(LSx)) have the smallest value are selected;

f) the selected signaling line groups (LSx) are assigned to the actual routes (CRy) for the respective destination addresses; and

10 g) the values of the affected summation meters (C_Sum(LSx)) are adapted.

6. The method as claimed in patent claim 5, characterized in that in step g) the adaptation of the affected summation meters (C_Sum(LSx)) constitute an
15 incrementation of the summation meter with the smallest sum and a decrementation of the summation meter for the failed or the newly available signaling line group.

7. A method for improving a load distribution in a signaling network having a plurality of message
20 transfer parts (MTP) and associated signaling line groups (LSx) composed of the combination of the method as claimed in patent claim 5 or 6 for selecting an actual route, and the method as claimed in one of patent claims 1 to 4 for setting up an actual route.